CLAIMS

We claim:

1. A tidal seepage meter, comprising:
   a) a power supply;
   b) a controller, operatively coupled to said power supply, capable of controlling said power supply in accordance with a sampling schedule.
   c) a motor, operatively coupled to said power supply, capable of receiving power from said power supply in accordance with said sampling schedule;
   d) a selector valve comprising an input port and at least two outlet ports, operatively coupled to said motor, capable of selecting an output valve in accordance with said sampling schedule;
   e) a seepage chamber, operatively coupled to said selector valve, capable of receiving seepage and inputting seepage to said selector valve via said input port;
   f) at least two sample containers, operatively coupled to said selector valve via at least two output valves, capable of receiving seepage from said selector valve via said output valve.
2. The tidal seepage meter of Claim 1, wherein said controller further comprises a motor relay.
3. The tidal seepage meter of Claim 1, wherein said tidal seepage meter further comprises a computer, operatively coupled to said controller.
4. The tidal seepage meter of Claim 3, wherein said computer is operatively coupled to said controller during uploading of said sampling schedule.
5. The tidal seepage meter of Claim 1, wherein said power supply comprises:
   i) a DC battery, capable of providing a voltage;
   ii) an inverter, operatively coupled to said motor;
   iii) a battery relay, operatively coupled to said controller, said inverter and said DC battery, capable of coupling said inverter and said DC battery in accordance with a sampling schedule.

6. The tidal seepage meter of Claim 1, wherein said power supply comprises a DC battery capable of providing a voltage.

7. The tidal seepage meter of Claim 1, wherein said selector valve comprises at least two multi-way selector valves.

8. The tidal seepage meter of Claim 1, wherein said seepage chamber comprises a semi-enclosed chamber.

9. The tidal seepage meter of Claim 1, wherein said motor comprises a stepper motor.

10. A method for a tidal seepage meter, the method comprising the steps of:

a) transferring a sampling schedule having at least two sampling times;

b) positioning said tidal seepage meter in sediment;

c) sampling seepage in accordance with said sampling schedule.

11. The method of Claim 10 wherein said transferring a sampling schedule step (a) comprises the following sub-steps:

i) preparing said tidal seepage meter;

ii) transferring said sampling schedule having at least two sampling times.

12. The method of Claim 11 wherein said preparing said tidal seepage meter step (i) of Claim 11 comprises cleaning all plumbing.

13. The method of Claim 10 wherein said positioning said tidal seepage meter in sediment step (b) comprises the following sub-steps:

i) positioning said tidal seepage meter in sediment;

ii) equilibrating said tidal seepage meter.

14. The method of Claim 10 wherein said positioning said tidal seepage meter in sediment step (b) comprises the following sub-steps:

i) positioning said tidal seepage meter in sediment;

ii) equilibrating said tidal seepage meter;

iii) activating said tidal seepage meter.

15. The method of Claim 10 wherein said sampling seepage in accordance with said sampling schedule step (c) comprises the following sub-steps:

i) sampling seepage in accordance with said sampling schedule;

ii) retrieving tidal seepage meter samples.

16. The method of Claim 10 wherein said sampling seepage in accordance with said sampling schedule step (c) comprises the following sub-steps:

i) determining whether scheduled rotation time has occurred;

ii) returning to said determining step (i) of Claim 16 if said rotation time has not occurred;

iii) rotating a selector valve if said rotation time has occurred;

iv) determining whether sampling is completed;

v) returning to said determining step (i) of Claim 16 if sampling is not completed.

17. The method of Claim 10 wherein said sampling seepage in accordance with said sampling schedule step (c) comprises the following sub-steps:

i) determining whether scheduled rotation time has occurred;

ii) returning to said determining step (i) of Claim 16 if said rotation time has not occurred;

iii) rotating a selector valve if said rotation time has occurred;

iv) determining whether sampling is completed;

v) returning to said determining step (i) of Claim 16 if sampling is not completed;

vi) rotating said selector valve to a plugged port if sampling is completed.

18. A tidal seepage meter, comprising:

a) means for transferring a sampling schedule having at least two sampling times;

b) means for positioning said tidal seepage meter in sediment;

c) means for sampling seepage in accordance with said sampling schedule.

19. The tidal seepage meter of Claim 18 wherein said means for transferring a sampling schedule comprises the following:

    i) means for preparing said tidal seepage meter;

    ii) means for transferring said sampling schedule having at least two sampling times.

20. The tidal seepage meter of Claim 18 wherein said means for positioning said tidal seepage meter in sediment comprises:

    i) means for positioning said tidal seepage meter in sediment;

    ii) means for equilibrating said tidal seepage meter.

21. The tidal seepage meter of Claim 18 wherein said means for positioning said tidal seepage meter in sediment comprises:

    i) means for positioning said tidal seepage meter in sediment;

    ii) means for equilibrating said tidal seepage meter;

    iii) means for activating said tidal seepage meter.

22. The tidal seepage meter of Claim 18 wherein said means for sampling seepage in accordance with said sampling schedule comprises:

    i) means for sampling seepage in accordance with said sampling schedule;

    ii) means for retrieving tidal seepage meter samples.